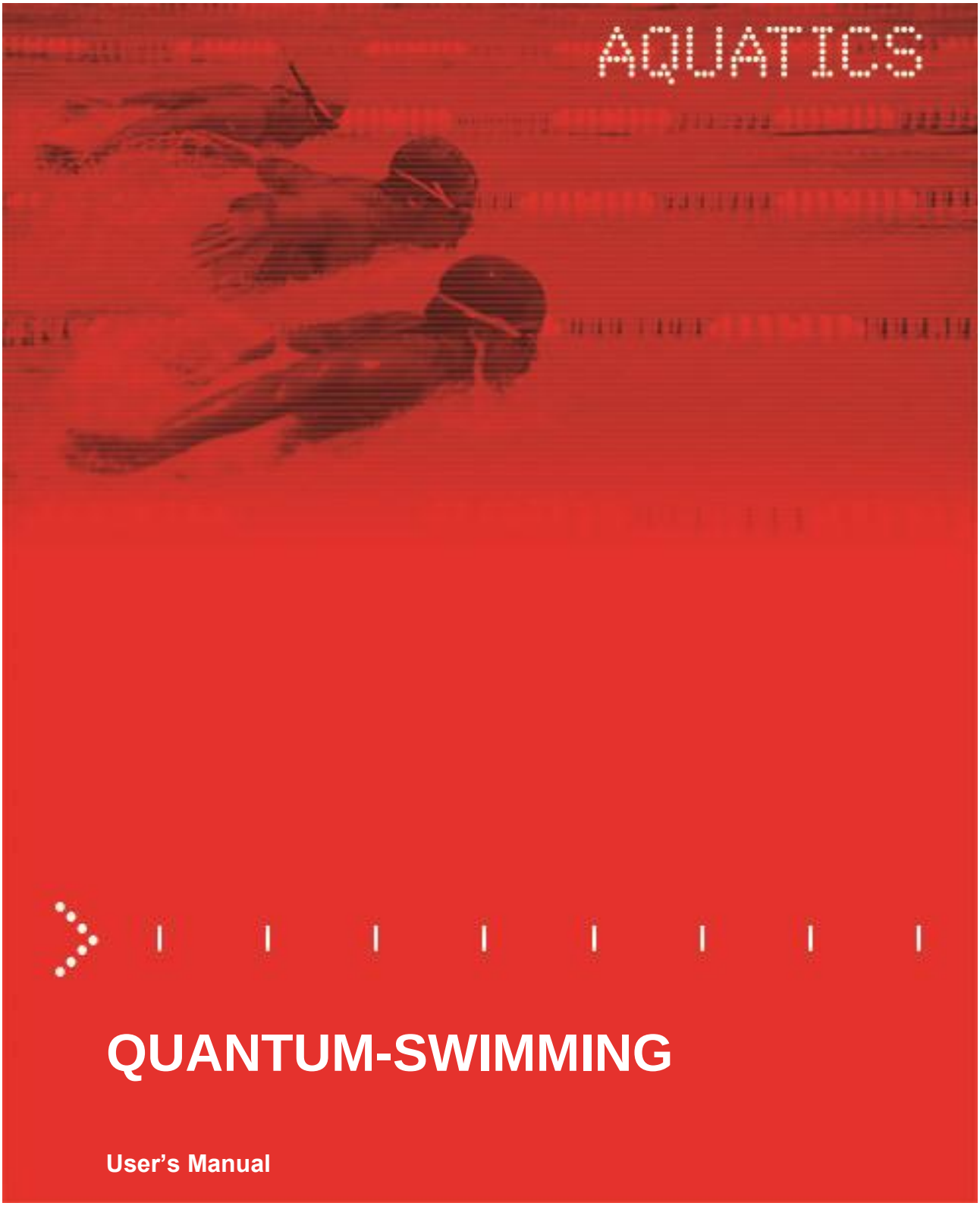
SWISS TIMING



QUANTUM-SWIMMING

User's Manual

3480.509.02

Version 1.0

Edition February 2014

Caution and safety precautions

- Never use any other charger than the supplied or a type approved by Swiss Timing. This could destroy the battery, cause damage to unit, and possible cause personal injury due to fire or/and electrical shock.
- Never bypass a power cord ground lead by breaking off the ground pin, or by using inappropriate extension cords or adapters.
- Never plug a power cord into the AC power source until you have made sure that all installation, cabling and power levels, are proper, and that the applicable procedures in this manual have been followed.
- Protect the equipment against splashing, rain and excessive sun rays.
- Never use the device if it is damaged or insecure.
- Verify the selection of the power distribution.
- Verify that the voltage quoted on the rating plate is the same as your voltage. Connect the appliance only to power sockets with protective earth. The use of incorrect connection voids warranty.
- This program may be modified at any time without prior notification.
- Do not open the case; there is nothing that needs servicing inside it. Nevertheless, if the case must be opened, you must call for some qualified personnel. The power supply cable must be disconnected before opening the case.
- During the transport of all Swiss Timing equipment delivered with a reusable carry case, the said case should be used at all times. This is imperative to limit the damage, such as shocks or vibration that can be caused to the units during transport.
- The same cases should also be used when returning equipment to Swiss Timing for repair. Swiss Timing reserves the right to refuse all guarantees if this condition is not fulfilled.
- If the installation includes a horn, be sure to maintain a sufficient security distance from the public.

Documentation Updates

Swiss Timing Ltd. reserves the right to make improvements in the products described in this documentation at any time without prior notice. Furthermore, Swiss Timing Ltd. reserves the right to revise this documentation in its content at any time and without any obligation to notify any person or organization of such revision.

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Environment

This symbol indicates that this product should not be disposed with household waste. It has to be returned to a local authorized collection system. By following this procedure you will contribute to the protection of the environment and human health. The recycling of the materials will help to conserve natural resources.

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info@swisstiming.com

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1 INTRODUCTION

QUANTUM Aquatics is an intelligent aquatics timer with inputs/outputs interface and onboard memory buffers. All timing events are recorded through each input port and are identified with a unique data code. Data from the timer interface is transmitted to the associated computer (desktop or notebook) through an USB port.

All data processing then takes place in that computer.

The quantity of data stored (i.e. number of races or competitions) is only limited by the size of the hard drive, enabling results from previous races to be recalled for examination on the computer's display, for re-transmission to the scoreboard or re-printing of the results.

Printed data is available in two formats.

The timer concept shall enable start lists and event data including titles and records to be loaded into the main timer database.

This enables a full result list to be generated by the timer, including competitor names.

This data is available for transmission to the main results printer or to a numeric, alphanumerical or matrix scoreboard.

The timer interface is operated from a twelve volt DC power pack.

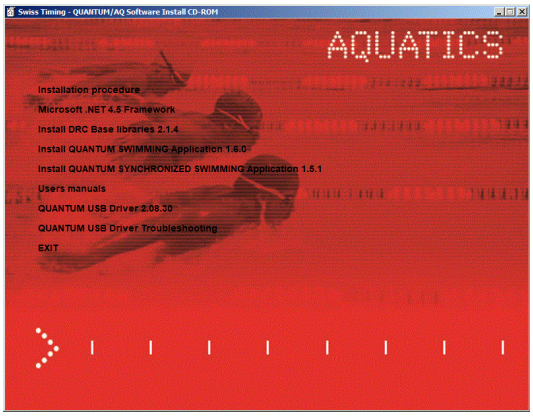
The addition of battery powered computers and A4 printer allows the competition to continue even in the event of a total mains power failure.

This feature also allows the timing system to be operated safely from the pool side.

The timing includes a primary and a secondary interface and a data switcher and is supplied with computer and appropriate software.

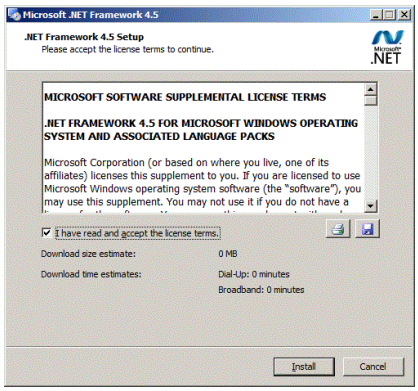
2 SOFTWARE INSTALLATION

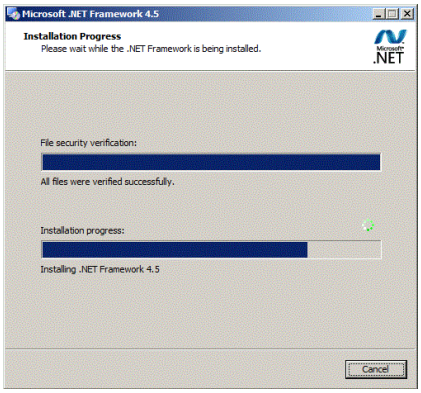
The Quantum Swimming application is designed to run on Windows 7 computer. To install the software, you don't need to connect USB dongle protection key .

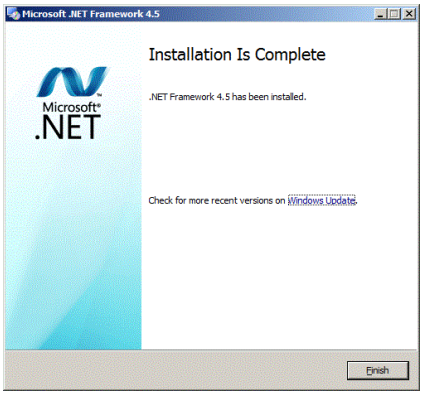


- Insert CD in your computer
- Start Intro
- Read « **Installation procedure** »

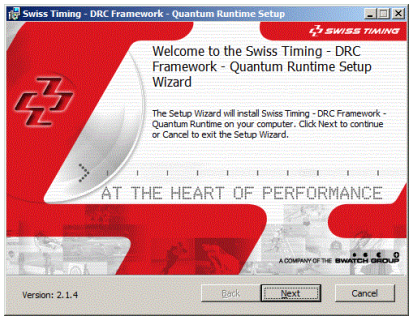
1. Start **Microsoft.NET Framework**

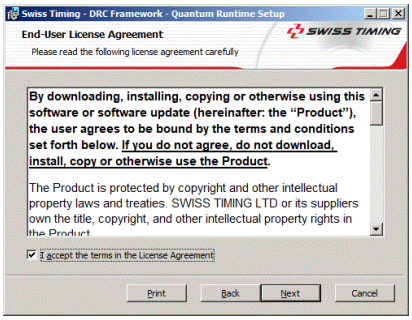

Microsoft .NET Framework 4.5
.NET Framework 4.5 Setup
Please accept the license terms to continue.
MICROSOFT SOFTWARE SUPPLEMENTAL LICENSE TERMS
.NET FRAMEWORK 4.5 FOR MICROSOFT WINDOWS OPERATING SYSTEM AND ASSOCIATED LANGUAGE PACKS
I have read and accept the license terms.
Download size estimate: 0 MB
Download time estimates: Dial-Up: 0 minutes
Broadband: 0 minutes
Install
Cancel

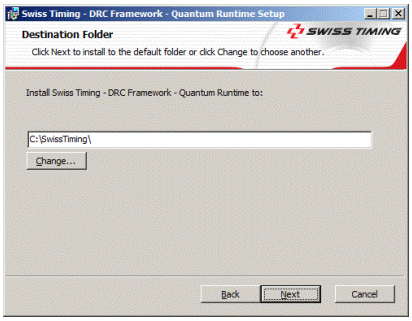



Microsoft .NET Framework 4.5
Installation Is Complete
.NET Framework 4.5 has been installed.
Check for more recent versions on Windows Update.
Finish

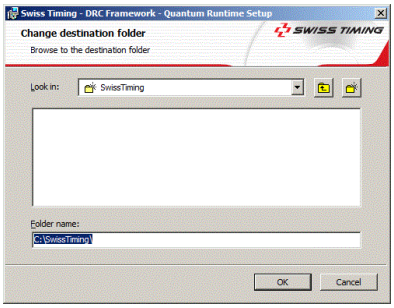
2. Start **DRC Base libraries**

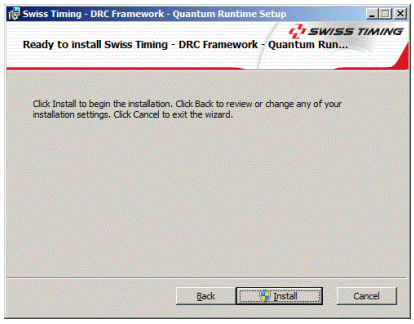

Swiss Timing - DRC Framework - Quantum Runtime Setup
Welcome to the Swiss Timing - DRC Framework - Quantum Runtime Setup Wizard
The Setup Wizard will install Swiss Timing - DRC Framework - Quantum Runtime on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
AT THE HEART OF PERFORMANCE
Version: 2.1.4
Back
Next
Cancel

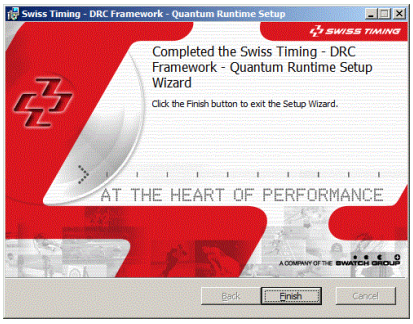

Swiss Timing - DRC Framework - Quantum Runtime Setup
End-User License Agreement
Please read the following license agreement carefully
By downloading, installing, copying or otherwise using this software or software update (hereinafter: the "Product"), the user agrees to be bound by the terms and conditions set forth below. If you do not agree, do not download, install, copy or otherwise use the Product.
The Product is protected by copyright and other intellectual property laws and treaties. SWISS TIMING LTD or its suppliers own the title, copyright, and other intellectual property rights in the Product.
I accept the terms in the License Agreement
Print
Back
Next
Cancel


Swiss Timing - DRC Framework - Quantum Runtime Setup
Destination Folder
Click Next to install to the default folder or click Change to choose another.
Install Swiss Timing - DRC Framework - Quantum Runtime to:
C:\SwissTiming\
Change...
Back
Next
Cancel

If you want to modify default folder, click on Change and select new destination.



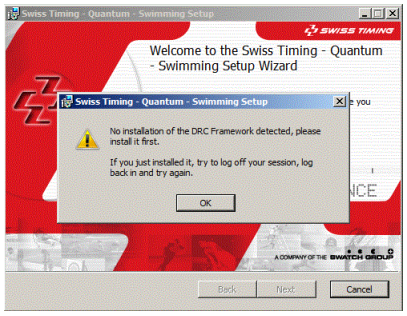

Swiss Timing - DRC Framework - Quantum Runtime Setup
SWISS TIMING
Ready to install Swiss Timing - DRC Framework - Quantum Run...
Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.
Back
Install
Cancel


Swiss Timing - DRC Framework - Quantum Runtime Setup
SWISS TIMING
Completed the Swiss Timing - DRC Framework - Quantum Runtime Setup Wizard
Click the Finish button to exit the Setup Wizard.
AT THE HEART OF PERFORMANCE
Back
Finish
Cancel

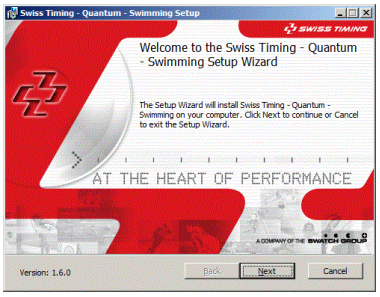
Click on Finish

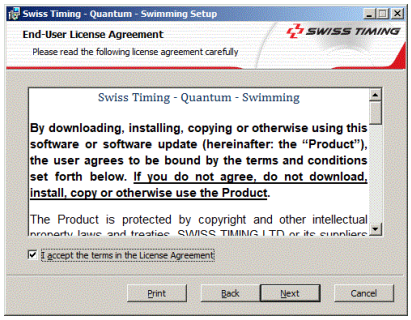
3. Start **QUANTUM SWIMMING**

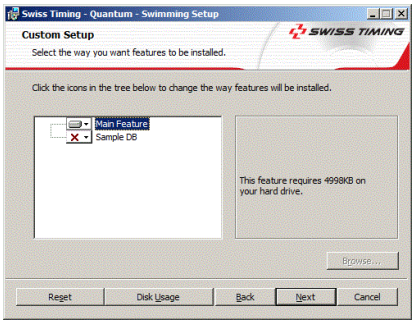
	The swimming application must be installed on the same HD as the framework

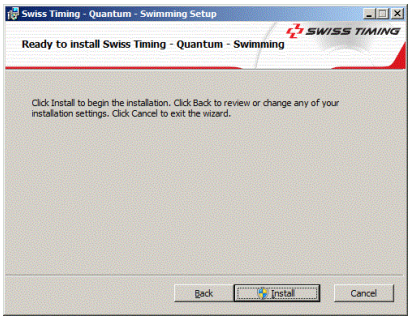

Swiss Timing - Quantum - Swimming Setup
SWISS TIMING
Welcome to the Swiss Timing - Quantum - Swimming Setup Wizard
Swiss Timing - Quantum - Swimming Setup
No installation of the DRC Framework detected, please install it first.
If you just installed it, try to log off your session, log back in and try again.
OK
AT THE HEART OF PERFORMANCE
Back
Next
Cancel

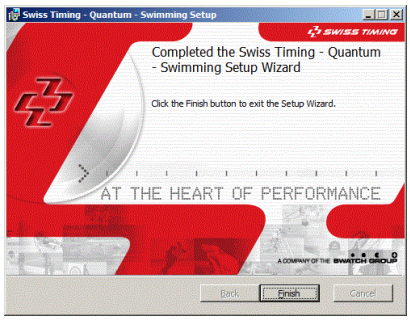
If error message appears, log off and log back and try again.
Error message will disappear


Swiss Timing - Quantum - Swimming Setup
SWISS TIMING
Welcome to the Swiss Timing - Quantum - Swimming Setup Wizard
The Setup Wizard will install Swiss Timing - Quantum - Swimming on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
AT THE HEART OF PERFORMANCE
Version: 1.6.0
Back
Next
Cancel


Swiss Timing - Quantum - Swimming Setup
End-User License Agreement
Please read the following license agreement carefully
SWISS TIMING
Swiss Timing - Quantum - Swimming
By downloading, installing, copying or otherwise using this software or software update (hereinafter: the "Product"), the user agrees to be bound by the terms and conditions set forth below. If you do not agree, do not download, install, copy or otherwise use the Product.
The Product is protected by copyright and other intellectual
I accept the terms in the License Agreement
Print
Back
Next
Cancel

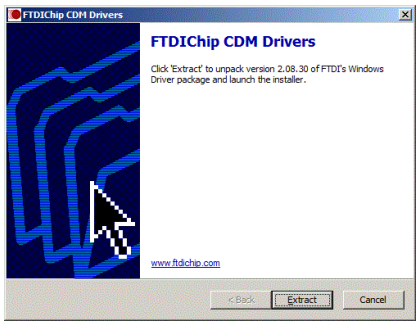


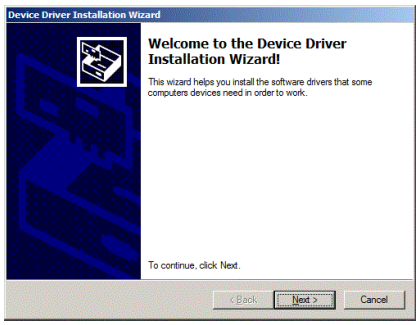

Swiss Timing - Quantum - Swimming Setup
Ready to install Swiss Timing - Quantum - Swimming
SWISS TIMING
Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.
Back
Install
Cancel

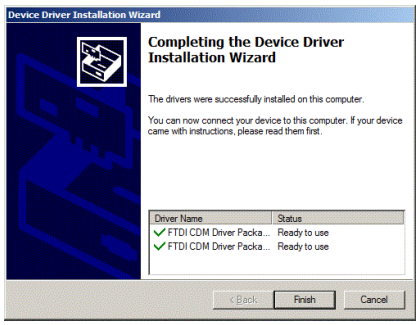

Swiss Timing - Quantum - Swimming Setup
SWISS TIMING
Completed the Swiss Timing - Quantum - Swimming Setup Wizard
Click the Finish button to exit the Setup Wizard.
AT THE HEART OF PERFORMANCE
Back
Finish
Cancel

Installation of Quantum Swimming icon is completed

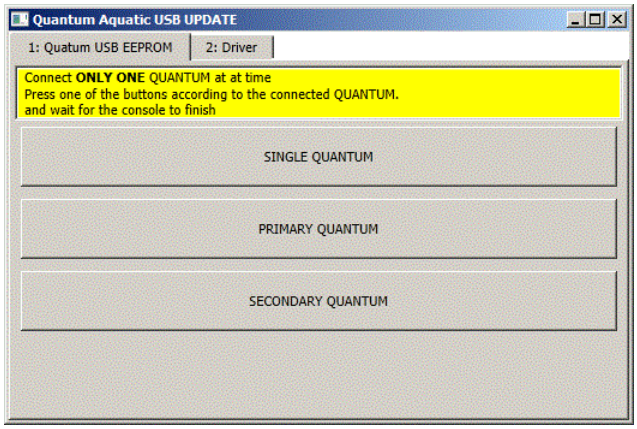
4. Start **QUANTUM USB Driver**

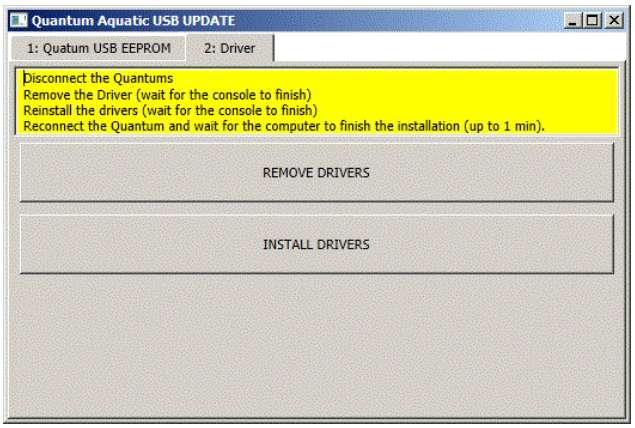



Device Driver Installation Wizard
Welcome to the Device Driver Installation Wizard!
This wizard helps you install the software drivers that some computers devices need in order to work.
To continue, click Next.
< Back
Next >
Cancel


Device Driver Installation Wizard
Completing the Device Driver Installation Wizard
The drivers were successfully installed on this computer.
You can now connect your device to this computer. If your device came with instructions, please read them first.
Driver Name
Status
FTDI CDM Driver Packa...
Ready to use
FTDI CDM Driver Packa...
Ready to use
< Back
Finish
Cancel

With **QUANTUM USB Driver Troubleshooting**, you can check connection between your computer and Quantum device. You can also remove the drivers and install them again. Use only for repair.


Quantum Aquatic USB UPDATE
1: Quatum USB EEPROM
2: Driver
Connect ONLY ONE QUANTUM at at time
Press one of the buttons according to the connected QUANTUM.
and wait for the console to finish
SINGLE QUANTUM
PRIMARY QUANTUM
SECONDARY QUANTUM

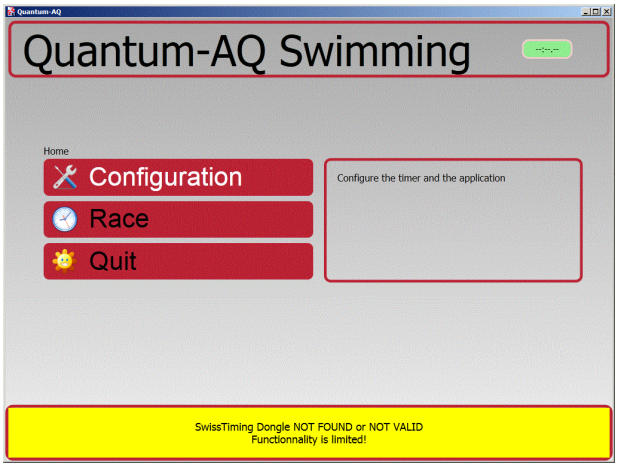

Quantum Aquatic USB UPDATE
1: Quatum USB EEPROM
2: Driver
Disconnect the Quantums
Remove the Driver (wait for the console to finish)
Reinstall the drivers (wait for the console to finish)
Reconnect the Quantum and wait for the computer to finish the installation (up to 1 min).
REMOVE DRIVERS
INSTALL DRIVERS

5. Start **EXIT** to close application

3 HOME PAGE

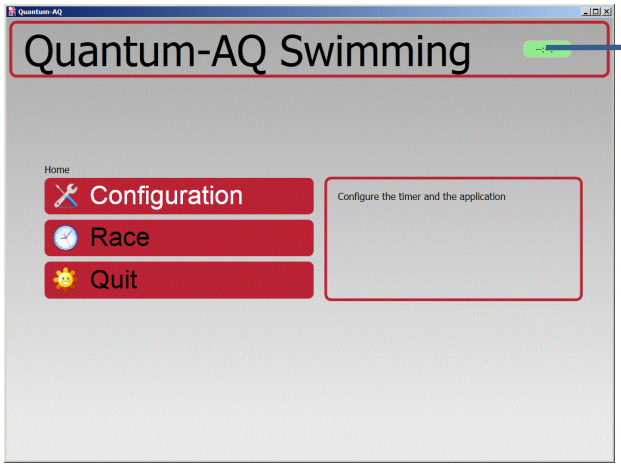
Select the Quantum AQ swimming program by double clicking on the Swimming icon .

A window will appear as shown on the right. This is known as the **Home** page. If the box top right is red instead of green, go to the section 4.1.1.



Quantum swimming software is protected by USB dongle protection key . If dongle is not installed, information message will appear.
It is not possible to start a Race without dongle.
See also section 4.3.1

If the dongle is correctly connected to the computer, information message will disappear.



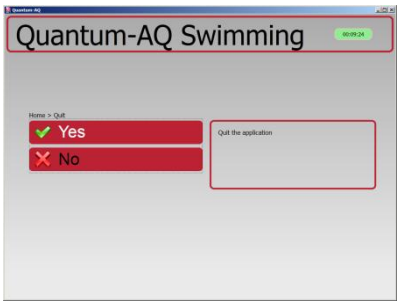
Green: PC is connected to QUANTUM-AQ Timer (through USB cable)

Red : No connection to QUANTUM-AQ

Configuration
Synchronisation of QUANTUM-AQ
Serial port COM
Language

Race
Open and create a meet
Start a race

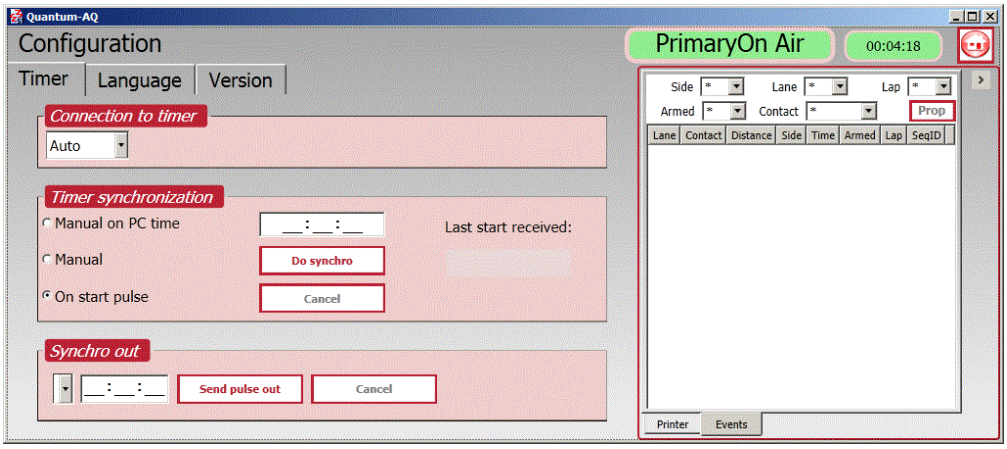
Quit
To exit the software, return to **Home** and select **Quit**



- **Yes** to confirm exit
- **No** to return in Main Menu

4 CONFIGURATION MENU

Selecting Configuration will display a new page, with 3 tabs on the left, and the event window on the right.



4.1 Timer

Click to return Home

4.1.1 Connection to timer (USB COM)

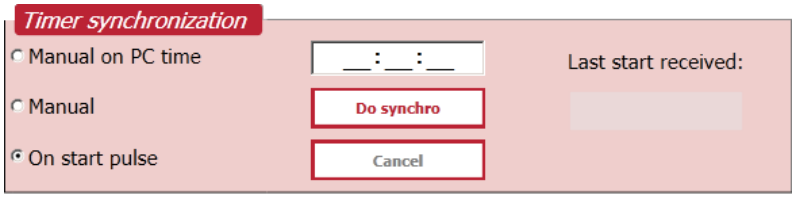
Allow possibility to select USB Serial Port from the list.

Auto: The application will scan the USB port to find the Quantum-AQ, this is the preferred method of connection.

⚠ In mode “Auto”, software might take up to 10s to find the connection (Over 1 min. for the first Quantum connection).

4.1.2 Timer synchronisation

All of the timing functions are carried out by the Quantum AQ interface, and all times are calculated against a daytime clock running within it. When you enter the program and switch on the interface it is important to synchronise this time base. To do so, choose **PC time**, **Manual** or **On Start Pulse** and press **Do synchro** (or start button on device).



Manual on PC time
This function can be used to set the clock of a single timer. The timer will use the PC time when the “Do Synchro” button is pressed.

Manual
This function can be used to set the clock of a single timer. First enter the desired time in the field and the press the “Do Synchro” button.

On start pulse
This is the preferred method when Primary and Secondary timer synchronisation is required.

1. Connect the StartTime and turn it on.
2. Enter the desired time in the field (for both Primary and Secondary Timer).
3. Press the “Do Synchro” button (for both Primary and Secondary Timer): the timers are now waiting for a start pulse.
4. On the StartTime, the ready light is now on, a start can be done.
5. Both timers will be synchronised when the start pulse is received.
6. 2 seconds after the start, the ready light is on again, thus allowing a test to confirm that both timers are correctly synchronised.

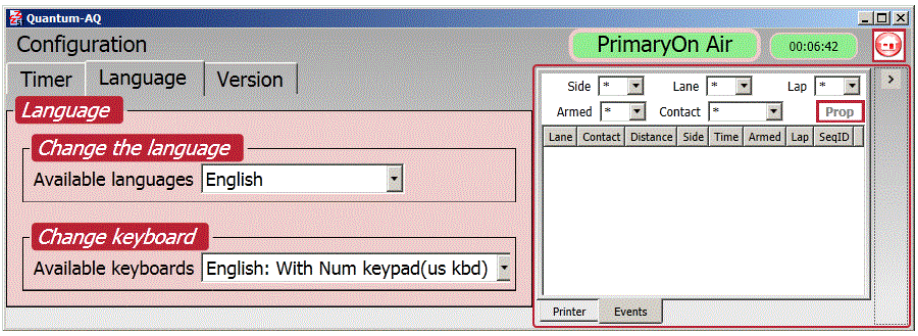
4.1.3 Synchro out (Primary & Secondary)

The “Synchro Out” triggers a pulse on the Starts Out connectors (Quantum Primary & secondary only) at a precise time.

1. Select from the combo list box the output desired time (based on the Timer Time, not the PC Time). The countdown indicates the time left until the next possible synch out time.
2. Press “Send Pulse Out”: The system is in waiting mode until the pulse is sent out.

4.2 Language Configuration

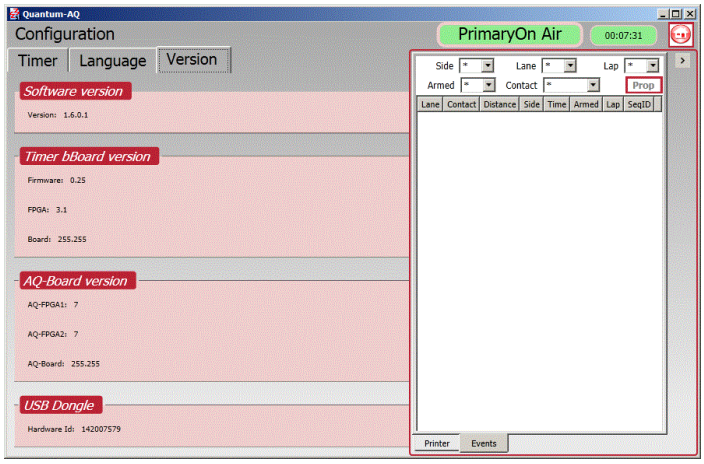
Select software language and keyboard.



Click to return in main menu.

4.3 About Version

This windows shows software versions and dongle identity

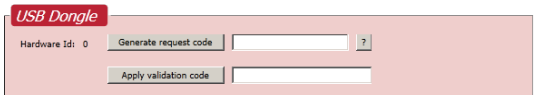


4.3.1 Protection Dongle

Quantum swimming software is protected by USB dongle protection key . If the dongle is not installed, information message appears.

It is not possible to start a Race without dongle
If dongle is correctly connected to the computer, an information message disappears.

If you loose your dongle before a meet, you can request a limited code for 3 days.
Go to Configuration and select Version Tab. Press ? for help.

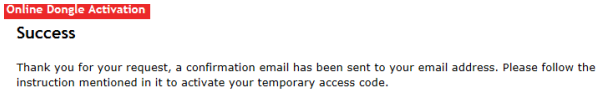


Click on Generate request code and go to the web site http://onlinedongleactivation.sportresult.com
Type in the Request code and fill all the fields.

Insert the captcha code s5pfd displayed.
If captcha code is difficult to read, press and a new captcha code will appear.

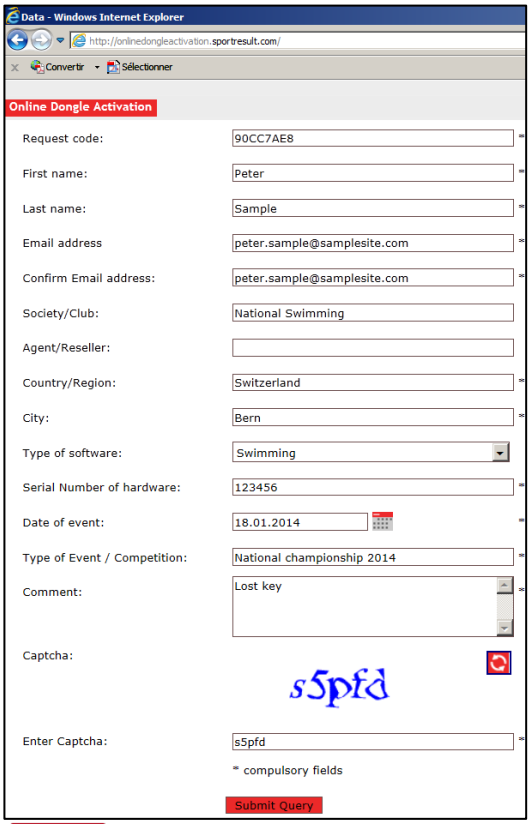
Click Submit Query

A confirmation message is displayed

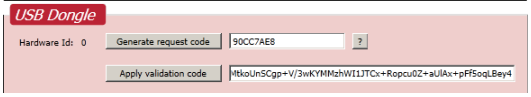

Online Dongle Activation
Success
Thank you for your request, a confirmation email has been sent to your email address. Please follow the instruction mentioned in it to activate your temporary access code.

A validation code will be emailed to the specified email address.

Dear User,
Below is a temporary password * to run your Swiss Timing software:
4ZpGMtkoUnSCgp+V/3wKYMMzhW11JTCx+Ropcu0Z+aUlAx+pFf5oqLBey4
*Please note that this password will be active for a maximum of 4 days only!
Should you find the original dongle, you could proceed to use it as always and the temporary password is automatically cancelled. Should you not find the original dongle, please get in touch with our After Sales Service at aftersales.swisstiming@swisstiming.com.
Best regards,
Swiss Timing

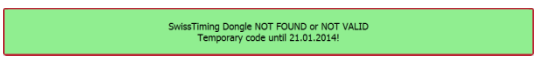


Return in the Version Tab of swimming software.
Type in or paste the received validation code



Press Apply validation code. Your licence is now valid for 3 days starting from date of event.

When temporary code is activated, home menu display information about validity.



Note :

- The request code and the validation code are paired. If you press again Generate request code, then you will have to redo the internet procedure to obtain another code.
- When a valid has been detected, the request and validation codes are cancelled.
- When the computer date is changed in the past, the request and validation codes are cancelled.

5 RACE MENU

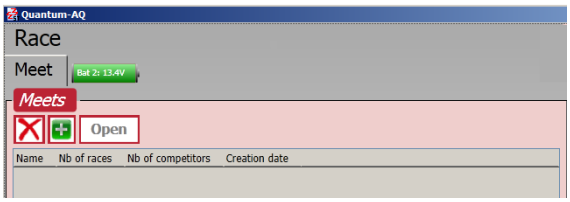
5.1 Preparing a meet

A meet setup is required before being able to run a meet. The preparation consists of

1. choosing a name
2. checking/altering the timing setting
3. checking/altering the pool cabling configuration
4. checking/altering the peripherals connection options.

5.1.1 Open, Create & Delete a meet

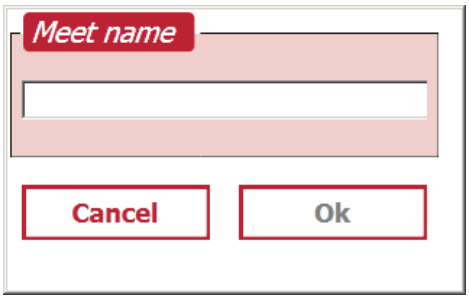
The Quantum-AQ does not make any distinction between a meet and a session of a meet. If a meet is divided in multiple sessions, it is recommended that you create one meet for each session in your program.



5.1.1.1.1 Create a meet

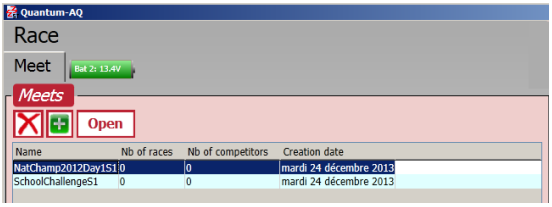
Use the button to add a new meet. The name of the meet is a free text that is free to choose. It will in fact be the folder name where data for that meet will be stored. When choosing a name for a meet but consider:

Do not use special characters.



Indicate the session number at the end of the name (recommended when using LstFile to import the schedule).
Example of correct names: **NatChamp2014Day1S1**
SchoolChallengeS1

5.1.1.1.2 Open a meet



To open a meet:

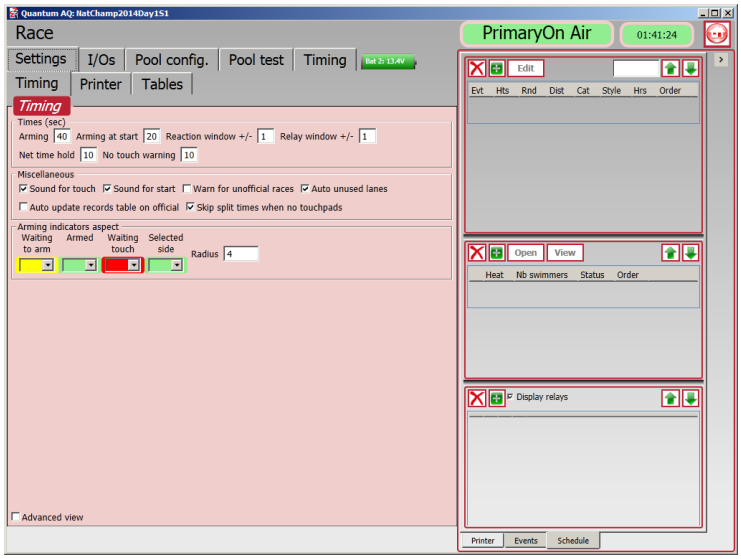
- Select meet and click Open.
- Double click on a selected meet.

5.1.1.1.3 Delete a meet

To delete a meet:

- Select meet and click .

5.2 Settings



Race page displays five top line tabs plus a real time indicator of the Quantum AQ battery life.

These are the general timing settings that apply for the current meet. They can be altered at any time during competitions. Any changes there will not have retroactive effects on races previously performed.

Important settings there are:

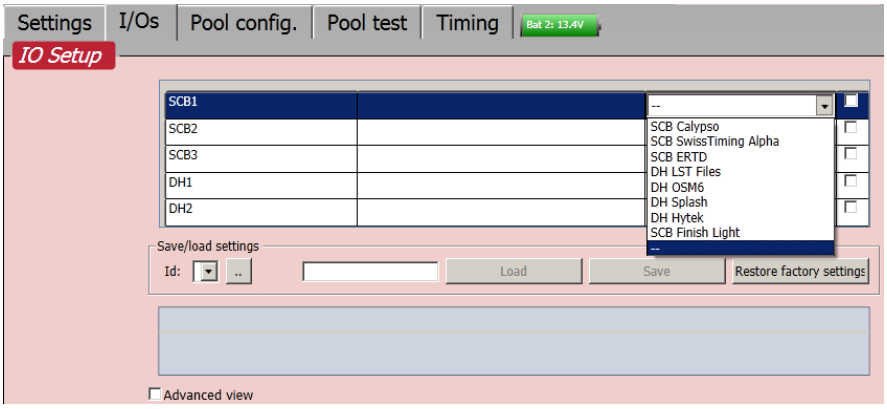
- Reaction Time Window: Specifies the time window within which a reaction time will be accepted after or before a start. Typically, the value is 2 seconds

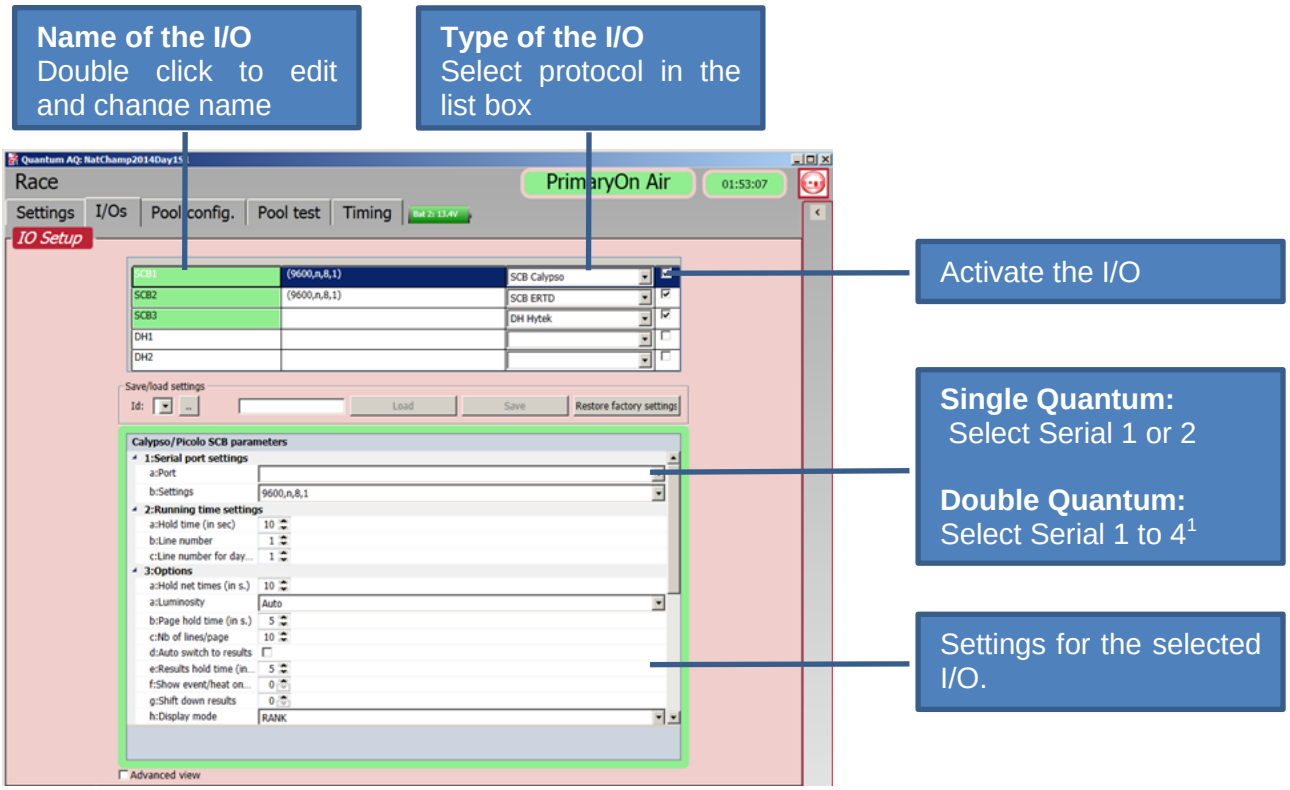
- Relay time window: Specifies the time window within which a relay takes over will be measured before or after the arrival of previous team member. Typically, the value is 1 second.

- Split Time hold: Specifies how long the split will stay on the screen before being cleared. This affects only the timing window, not the scoreboard output(s), as they have their own settings.

5.2.1 I/Os (Scoreboards and Data handling peripherals)

Selects and configures scoreboard and data handling connections. To add a new configuration to a blank line, click in the drop down list of choices. To modify an existing line, click once to highlight it. Different choices have different options. The common ones are, for **Scoreboards**, Alpha for Galactica systems and Calypso for Swiss Timing numeric displays. For single Quantums you can choose Serial1 or Serial2 for the output port. Double Quantums add Serial3 and Serial4[1]. Default values will populate all the other settings, which should normally not be changed.
Alpha has additional parameters to shape the templates for each screen. Highlighting the template name displays additional parameters below the window.
Data handling, for Hytek insert the shared folder name and Data Set value, for Lst files, provide the working folder name. Check the corresponding box to enable the chosen I/O.





[1] Serial 4 is not displayed where bi-directional data is required

5.2.1.1 SCOREBOARDS

Currently, the following scoreboard types are available:

- **SCB_SwissTiming Alpha** : Alphanumeric feed of the 12x32chars type. The protocol is the Swiss Timing Custom Protocol. Compatible with Swiss Timing IRIS and Galactica scoreboards.

  Parameters :

  1a-1b *Requires serial port and valid settings. Default is Serial 1 and 9600,n,8,1*

  3d *With Auto switch to Results enabled, scoreboard will change to a result list when the current race is flagged as "official".*

  3e *If result page is displayed, and a new race is started, the scoreboard will revert to the race after the time specified.*

  4a-4g *Content for various scoreboard pages are controlled using a series of tokens and masks.*

  By highlighting a title, the info section below details the values for each token on that line. A token can be used on its own, e.g. {1}, or you can define the maximum length using the format {1:L12} where the contents of token {1} would be truncated after 12 characters and justified Left. You can also use C or R for centre or right justification.

  5a-5d *There are four masks where the lines of tokens are repeated for the number of lanes defined for the competition. These are for start list presentation, race mode, race result and event summary*

  6a *Start a test pattern. The scoreboard must be activated.*

- **SCB ERTD** : Alphanumeric feed of the 12x32chars type. The protocol is the ERTD protocol, each line at an offset of 100 characters. Line 1 at the offset 1, line 2 at the offset 101, line 3 at the offset 201, and so on.

  Parameters :

  Control options are the same as for Swiss Timing Alpha above

- **SCB Calypso** : A numeric output compatible with Swiss Timing scoreboards.

  Parameters :

  1a-1b *Requires serial port and valid settings. Default is Serial 1 and 9600,n,8,1*

  3d *With Auto switch to Results enabled, scoreboard will change to a result list when the current race is flagged as "official".*

  3e *If result page is displayed, and a new race is started, the scoreboard will revert to the race after the time specified.*

  3f *Event and heat can be included in the message to SCB. Select 0 for No Display or on which line you want to display event/heat*

  3g *Select of how many lines the result should be shifted down. Useful to keep the event/heat on the board. Default is 0.*

  5a *Start a test pattern. The scoreboard must be activated.*

- **SCB Finish Light** : Currently reserved for Swiss Timing Service use.

5.2.1.2 DATA HANDLING

Currently the following Data Handling interfaces are available:

- **DH_LSTFILES**: This type of DH can import the schedule and start lists from the LSTxxx.TXT file (ARES files type). It can also export the result to the LSTResults.txt file. Requires communications via a folder. It is recommended to use a shared folder on the Quantum Computer. A set of text files defining each part of a database and using a series of indexes to link to each other.

LstStyle.txt	Swim styles, e.g. freestyle
LstLong.txt	Race distances, e.g. 50 metres
LstCat.txt	Categories, e.g. Men
LstRound.txt	Competitions phases, e.g. Final
LstStat.txt	Status (optional), e.g. DQ
LstRace.txt	Schedule. The list of events in a meet
LstRecord.txt	Records, e.g. WR
LstComp.txt	Competitor names
LstStart.txt	Start lists, composition of each heat

The content of these files are typically managed and generated by third party software such as Sportsystems, Hytek Meet Manager or a spreadsheet application.

Parameters :

1a *Insert (or create) a valid path for the files*

1b *You can also create sub folders to act as separate sessions of a meet. Then we can use the Mask for the session to complete the folder path. To use this, both the session folder and the Meet name chosen should include the same numeric value. e.g. c:\MyMeet\Session1 with meet name 'MyMeetS1'. Enter the prefix of the session folder without the numeric value.*

1c *Results can be exported to another file, LstRslt.txt. If is checked, then the result export will be done on the "official" button of each race*

4a *By pressing Start, the software will check the defined path for the existence of all files and list the results of the check*

- **DH_OSM6**: This type of DH sends results via a serial port using the OSM6 protocol. This is a one way communication from Quantum to external peripheral (Quantum can receive a keep alive message from the peripheral to visually confirm the communication status.) DH packages such as Sportsystems use this method to collect results in combination with DH Lst Files to import the schedule and start lists

Parameters :

1a-1b *Requires serial port and valid settings. Default is Serial 1 and 9600,n,8,1*

2a *Set to a value of 0 to disable the presence message for older systems*

- **DH_HYTEK**: This type of DH can import the schedule and the start list from the Hy-Tek Meet Manager application using file on a shared folder. The results are also exported to a file. Requires shared communications via a shared folder. It is recommended to use a shared folder on the Quantum Computer. The Hytek software should create the schedule as “quantum.sch” and the start lists as “startlist.slx”. Please check your version has this option. Updates are available from your Hytek supplier. Quantum will export the results as *.qaq files. Quantum will try to load the style table from the Defaults folder. It will select the correct file according to the language selected

  Parameters :

  1a *Insert (or create) a valid path for the files*

  1b *Insert HYTEK Data Set number*

  2a *Set to a value of 0 to disable the presence message for older systems*

- **DH_SPLASH**: This type of DH can import the schedule and the start list from the GeoLogix SPLASH application. The results are sent the same way. Requires shared communications via a shared folder. It is recommended to use a shared folder on the Quantum Computer.

  The Splash software should create a file “splash_send.txt” to communicate with Quantum. Quantum will create a file “splash_receive.txt” to send requests and data to Splash

  Parameters :

  1a *Insert (or create) a valid path for the files*

  1b *Check to have the results saved when the race 'official' button is pressed*

  1c *Use option to toggle between using club name or nation in Quantum*

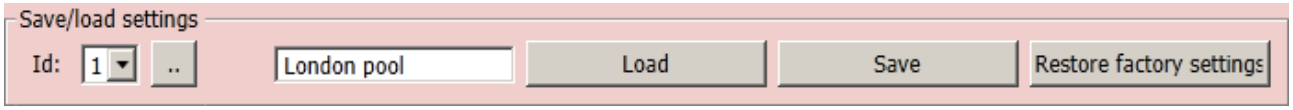
  1d *Option will reverse the first and last names for scoreboard and print output.*

5.2.1.3 SAVING I/O SETTINGS

Quantum can save up to five versions (Id) of your configuration, so if you change venue, or have different results teams, each can be set quickly when you move.

Choose an Id, type in a meaningful name as a reminder and click save.

To restore the settings, Select the ID and click Load.



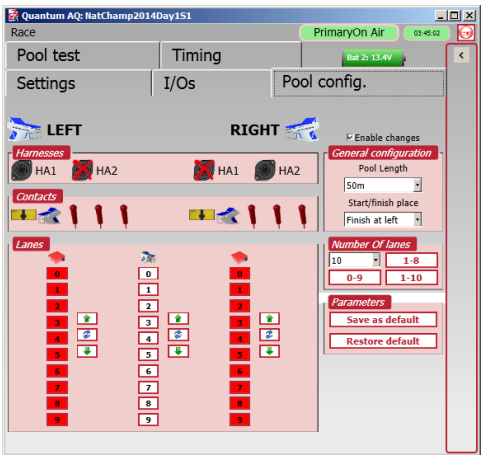
Note

If you return to settings and change an option, you should ensure that the check box is enabled to confirm your I/O choice is active with the new option(s).

When you return to the Race tab, your active SCB and DH are displayed with a green background.

Additional actions can be performed from the available options displayed when clicking these buttons.

5.2.2 Pool Configuration



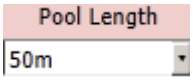
This is a very important step in the preparation process that must be attended to with great care. In the pool configuration screen you will tell the application all about the connections that are actually done in the pool: touchpads, platforms, push buttons….

Enable changes protects you against modification.
If you have already opened a race for timing this will Be unchecked automatically.

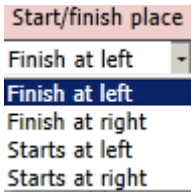
The confirmation informs the application about:

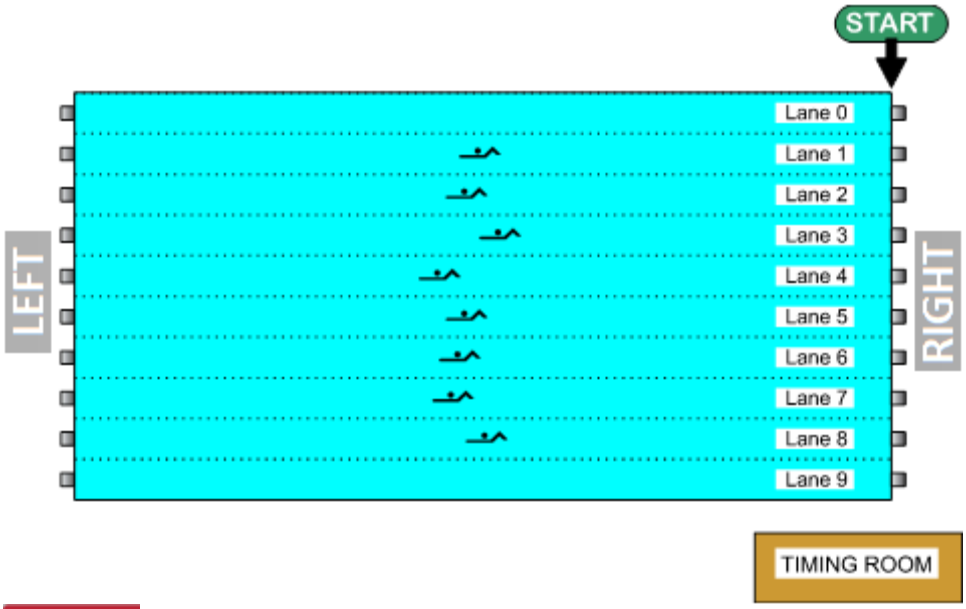
General configuration

What is the pool length: 25m or 50m? Select your pool length
If a different pool length is required the values in the drop down box can be edited using the StTranslatorAssist application and changing the PoolConfig_PoolLengthList mode



On which side do all the finishes (or in some cases all the starts) occurs?





Harnesses

Is there a harness (chain of modules) on the left (or right) hand side, and if so, on which connector is it tied?

Shows a visual representation of harness connection. Click on each icon to enable or disable each item so that it is the same as your pool setup. If there are touchpads at both ends of the pool then select a harness for **left** and **right**. If pads are installed at one end only then ensure the opposite end has an over each harness

Contacts

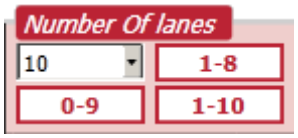
Which devices are present on each module: a touchpad? a platform? any push buttons?

Shows a visual representation of what you have connected to each harness. Click on each icon to enable or disable each item so that it is the same as your pool setup.

Number Of lanes

How many lanes are used and what is their sequential order?

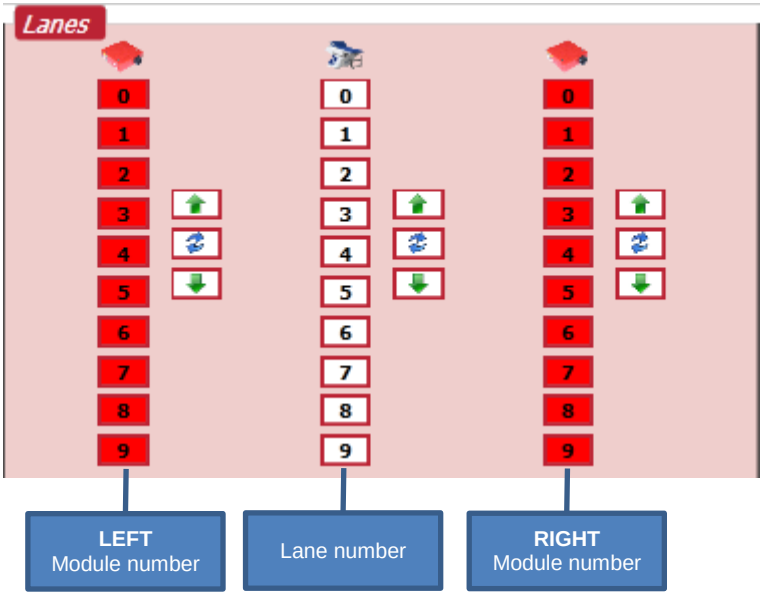
Select preconfigured lanes number and sequential order or lanes number in list box. This selection modifies Lanes display.



Lanes

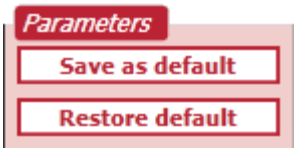
What is the match between a lane and its associated module number?

Lane sequence can be changed using the up and down arrows, or individually by clicking on the lane box. The outside column(s) are the module id and the central column is the lane number. With this flexibility, it is possible for example to set modules 3 and 5 to act as lane 1 and lane 2, and host a head to head competition in the centre of the pool. The blue arrow buttons will invert the whole column.



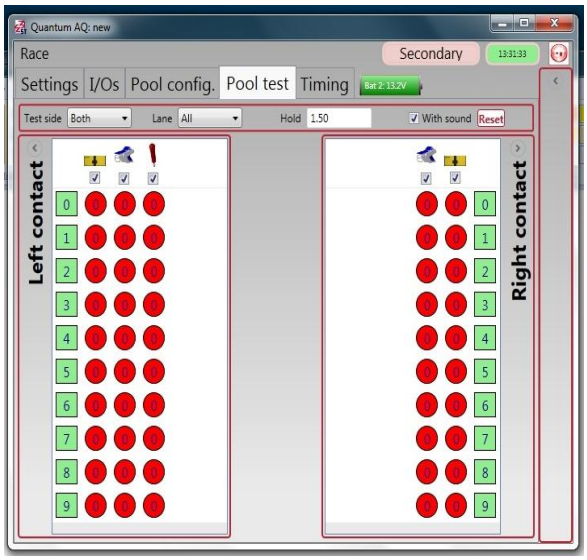
A module number is green when it is correctly connected to the timer

Check that the **pool length** and number of lanes are correct then click on Save as default if this is the common setup for your competitions



Click Restore default to restore default pool configuration.

5.2.3 Pool test



With pool test you can visually see that all contacts you have selected are operational and that they are delivering the contact to the lane allocated.

When there are harnesses at both ends of the pool each connected device has its own entry.

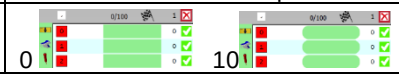
The Quantum automatically tests for and reports the presence of all the modules connected to the harnesses. For each id found, the red square will turn green when communication is successful.

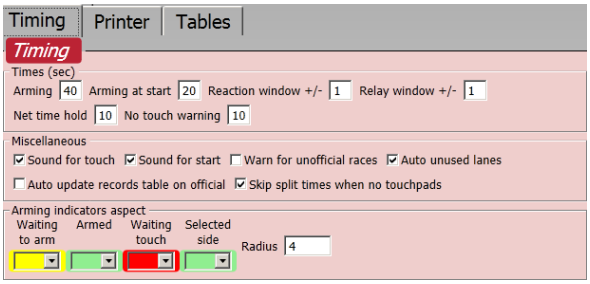
For example, if someone touches the pad on the right side in lane 3, you should check that that pad counter on the screen increases by one. If you are on your own, you can rotate the screen to face the pool, seeing clearly every press or touch as you test. The delay value Hold 1.50 determines how long (sec.) the last contact fills the screen. To test after a warm-up session, press the Reset to zero all the contact totals before beginning your final check.

With sound can be used if your computer is equipped with a loudspeaker.

5.2.4 Timing

Selects and configures race window.

Arming indicators aspect	
Waiting to arm	Define color when lane is waiting to arm
Armed	Define color when lane is armed
Waiting touch	Define color when lane is waiting a touchpad pulse
Selected side	Define color of selected pool side
Radius	



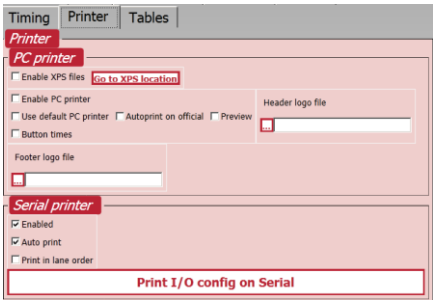
Times (sec)	
Arming	The arming delay should be a little less than the fastest time a swimmer can swim back and forth along the pool
Arming at start	The arming delay should be a little less than the fastest time a swimmer can swim from the start to the opposite end
Reaction window	Define window time for reaction time based before (-) and after (+) start
Relay window	Define window time for relay break detection based before (-) and after (+) touchpad pulse
Net time hold	Period where time is held
No touch warning	If touchpad pulse is not received after this period, warning is displayed

Miscellaneous	
Sound for touch	Computer will emit a beep for every new valid time
Sound for start	Computer will emit a beep for start
Warn for unofficial races	Open a warning window before next race if current race is unofficial
Auto unused lanes	Lane is flagged as Unused if there is no name in the startlist If you don't use start list, lanes are always activated
Auto update records table on official	Write in record table if new record on official
Skip split time when no touchpad	

5.2.5 Printers

Selects and configures printers.

PC printer	
Enable XPS files	Enable XPS files saving
Go to XPS location	Open directory where XPS files are saved
Enable PC printer	Enable computer printer
Use default printer	Use default printer selected in your computer
Autoprint on official	Print result automatically on official
Preview	Display preview before printing
Button times	Print result with backup buttons
Header logo file	Select a specific header logo on printing
Footer logo file	Select a specific footer logo on printing



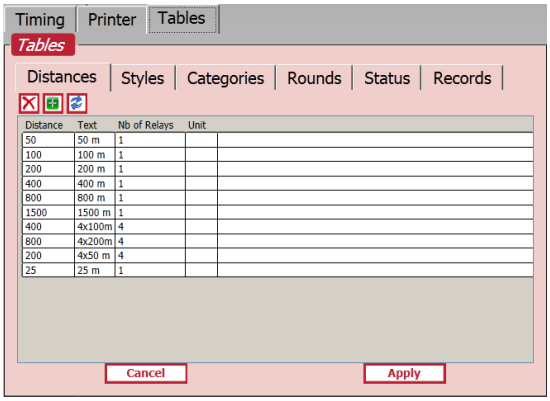
Serial printer	
Enable	Enable serial printer
Auto print	Print result automatically on official
Print in lane order	Print in rank order or in lane order if checked
Print I/O config on Serial	Print configuration on serial printer

5.2.6 Tables

The content of these tables are typically managed and generated by third party software such as Sportsystems, Hytek Meet Manager or a spreadsheet application.

You also have the possibility to create or delete records manually.

Table	*File name*	
Distances	LstStyle.txt	Race distances e.g. 50 metres
Styles	LstLong.txt	Swim styles e.g. Freestyle
Categories	LstCat.txt	Categories e.g. Men
Rounds	LstRound.txt	Competitions phases e.g. Final
Status	LstStat.txt	Status (optional) e.g. DQ
Records	LstRecord.txt	Records e.g. WR



6 RUNNING A MEET

When you select Race from the main menu, you must first select or create a Meet (Chapter 5.1).

6.1 Before the first race

Follow these steps to prepare for your first race :

- Connect all the components of the swimming system (see also Installation manual) :
    a. Start system(s)
    b. Harnesses
    c. Primary laptop (and secondary if applicable).
    d. Scoreboard and Data Handling connections

- Launch the Quantum-AQ Swimming application
- Synchronise the Quantum-AQ (See chapter CONFIGURATION)
  Use a start pulse to precisely synchronise primary and secondary.
- Open or Create a meet (See chapter RACE).
- Setup the I/Os : scoreboards and data handling interface.
- Setup the Pool Configuration:
  This step MUST be done before the entering or importing races into the schedule.
- Create or Import the schedule.
- Run the meet.

6.2 Schedule

A meet is usually a session of races therefore it should be called something descriptive that will tell other users what it is. For example “NatChamp2014Day1S1”. The creation date is displayed so there is no need to include that. If you are using LstFile as a Data Handling source and you have multiple sessions, then make the last character the session number, e.g. “NatChamp2014Day1S2”

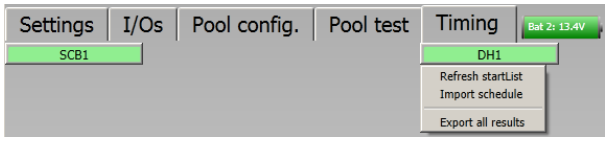
A meet creates a folder to store all data pertaining to the events, heats, competitors and times. This is normally %stDrcApp%\Quantum\Swimming\Data\[*name of your meet*].

Either highlight an existing meet and click “Open” or click the to create a new one.

To change the current meet, click the “Home” button and then reselect “Race”.

6.2.1 Import schedule

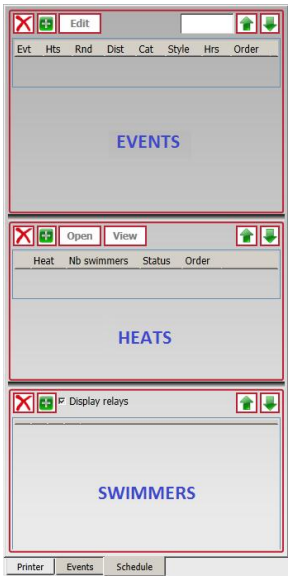
The first action is normally to import the schedule from a Data Handling system.



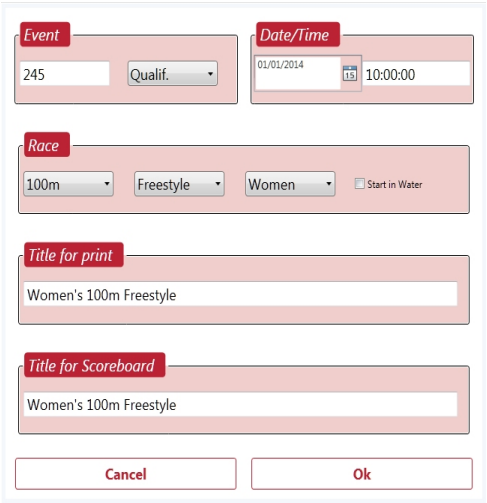
If you have setup a DH source on the I/O setup page and enabled it, it will be displayed at the top of the workspace as a green or white button. Click on your DH button and select Import schedule. Quantum will display a progress bar while the information loads, and will then populated the lists on the right of the screen. Other choices will vary depending on the type of source you are using. This action will populate the three windows within the Schedule tab displaying the events in the schedule, the heats for each event, and if available, the names of the competitors in each lane of each heat.

6.2.2 Create schedule manually

Without Data Handling, all of the information can be created manually. At the top of the schedule tab, click the to **add an event** and a dialog will be displayed showing all of the details needed to add an event to the schedule.

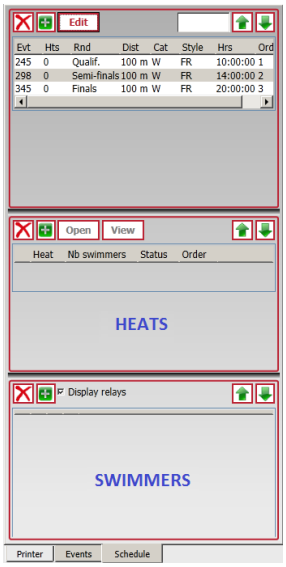


The Edit button allows for existing events to be reopened in the same dialog so that the details can be modified.



Once an event is in the schedule list, the order in the schedule can be changed by highlighting the event and pressing the green up and down arrows .

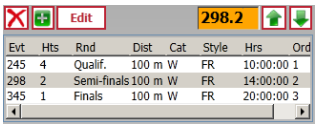
Click to delete an event.



In the middle window you have a list of available heats for each event. To manually **add heats**, click the once for each heat to be added. Additional heats can be added even during the event to allow for the unexpected.

At this point you can highlight and click Open to begin timing a race.

The **Quick Race** select can be used to open or view any race using the event and heat number.


Edit
298.2
Evt Hts Rnd Dist Cat Style Hrs Ord
245 4 Qualif. 100 m W FR 10:00:00 1
298 2 Semi-finals 100 m W FR 14:00:00 2
345 1 Finals 100 m W FR 20:00:00 3

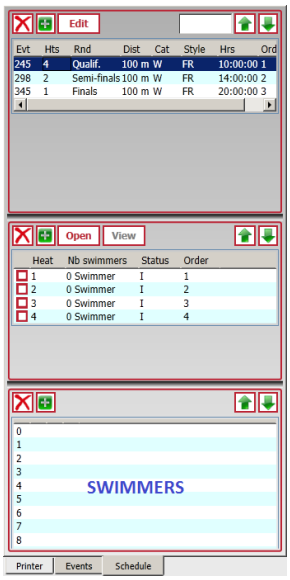
Click on the empty box and it will take focus and change colour. You can now type the event number followed by a "." and then the heat number.

Quick Race select

	By adding the "**+**" symbol 298.2+ the race will immediately open in race view, or after a warning if the race has already been run.
	By adding "**v**" 298.2v the race will be opened in the result view window. This action will break the link with the race view window.

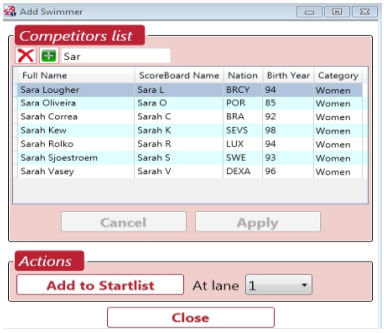
This quick view method can be useful if you are displaying previous results on a scoreboard for medal ceremonies during competition.

Pressing "**-**" at any time while typing will clear all characters from the selection box.


Edit
Evt Hts Rnd Dist Cat Style Hrs Ord
245 4 Qualif. 100 m W FR 10:00:00 1
298 2 Semi-finals 100 m W FR 14:00:00 2
345 1 Finals 100 m W FR 20:00:00 3
Open
View
Heat Nb swimmers Status Order
1 0 Swimmer I 1
2 0 Swimmer I 2
3 0 Swimmer I 3
4 0 Swimmer I 4
SWIMMERS
Printer
Events
Schedule

If you are using an alphanumeric scoreboard to show the race information or printing results from the Quantum software, **adding swimmers names** is desirable.

Open the **Add Swimmer** dialog by double clicking on any lane in the bottom schedule window, or by clicking the button.


Add Swimmer
Competitors list
Sar
Full Name ScoreBoard Name Nation Birth Year Category
Sara Lougher Sara L BRCY 94 Women
Sara Oliveira Sara O POR 85 Women
Sarah Correa Sarah C BRA 92 Women
Sarah Kew Sarah K SEVS 98 Women
Sarah Rolko Sarah R LUX 94 Women
Sarah Sjoestroem Sarah S SWE 93 Women
Sarah Vasey Sarah V DEXA 96 Women
Cancel
Apply
Actions
Add to Startlist
At lane 1
Close

All swimmers in the database will be displayed. By typing a few characters, any name can be quickly found as you type as the list updates dynamically. The sort order can also be toggled by clicking on the column headers. The button lets you add a new swimmer.

Click on a name to high light it, select a lane number from the drop down list and press **Add to Startlist** to insert the swimmer into the race. The name number will automatically increment ready for the next swimmer.

The will remove a swimmer from a lane and the up/down arrows allow lane positions to be changed.

If Quantum detects that the race type is a **relay race**, then an additional check box "Display relays" is added to the window.

If checked, as well as the team names, you can also add the members of the team. The **At lane** in the Add Swimmer dialog will also change to [team]-[order] so to add the second swimmer to lane four you would **Add to** 4-2. This allows the team names to be displayed on alphanumeric displays.

6.3 Start signal

Each Quantum has two start inputs, **P**rimary and **S**econdary. These will be displayed with a green background if they are detected by the Quantum, or red if not connected.

When you highlight a heat and click **Open**, or double click on the heat, the **timing view** window will be opened. The **Start armed** button should be green and checked, and an external start device connected (green), meaning you are ready to start the race. At the same time, the Quantum will send a signal to the start device, giving the starter a “ready” light so that they know that you are ready to begin. If you have a scoreboard connected then the clock field will display “0.00”.

Should there be a request to delay the start from an authorised official, you can press **Start armed** and it will toggle to the unarmed state

, switch off the starter's ready light and remove the “0.00” from the scoreboard.

By default, Swiss Timing start devices will automatically give a false start signal instead of the start tone if the ready light is not active when a start is attempted. This can however be overridden in the device settings. If a genuine start occurs and you are not armed, or even don't have the race window open, then you can retrieve the correct start time from the Quantum using the **Attrib last start** button. The most recent precise daytime (from Quantum's internal clock) of an unarmed start signal received is displayed below the button. If this is correct, clicking this button will activate the race using this start time. The small arrow to the right of the button will display a drop down list of all unarmed start signals, and offer a place to manually introduce a new start time with the most recent at the top of the list. By selecting a time and pressing Ok the race clock will adjust to use this start time.

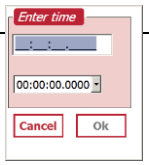
If a **False Start** occurs and the timing has started, pressing

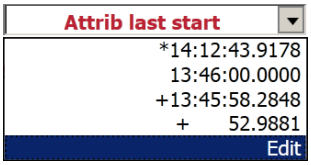
will reset the timing ready for a new start.

allows selection of another start time.

By double clicking on

, last start time is selected.

***14:12:43.9178**	* is selected start time of the current race
+13:45:58.2848	+ when start with Quantum in ready mode.
+ 52.9881	If start is made without synchro, time start at 0 from power on
Edit	Edit manually a start time ➔ 



Top left of the timing window is the .. set focus button. It is good practice to press this once a race has started. It gives the timing window topmost focus, which ensures that all keyboard short-cuts are recognised and actioned. When the window has focus, the colour of the frame will be yellow. If not, frame is red.

Yellow frame

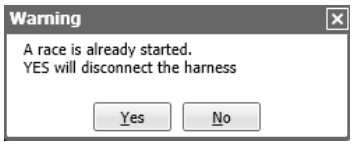
Race window has focus

Red frame

Race window hasn't focus

Below this is HA OFF which is green if there is a harness present. This toggles the connection to all harness modules, and will block all incoming timing pulses. When applied, the whole area will remain with a red background until the harness is reconnected.

Click HA OFF button and accept disconnection of harnesses. If race is already started, warning message appears.



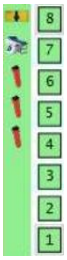
To reconnect harnesses, click HARNESSES DISCONNECTE.

Top right is the button which closes the timing window. If a race is still in progress, you will first see a warning message asking you to confirm that you really want to exit before the race has been completed.

Below this is the button. This will advance to the next heat in the schedule, or if you have completed the last heat in an event, it will advance to the next event. If a race is still in progress, you will first see a warning message asking you to confirm that you really want to close the current heat before the race has been completed.

6.4 The race window

The race window gives a full visual representation of everything related to the race, and allows you to control many elements of it. The actual view you see will depend on your pool configuration. Ideally, it should be laid out in the same way as you see the pool from your operating position. For example, in an eight lane pool, with finishes on your left and lane one being closest to your operating position, you would see a representation of this on the left of your race window. If you have a harness at both ends of the pool, there will be a similar image on the right side of the window.



If a lane number is green, the Quantum has good communications with that lane module. It will be orange if communications are in progress and red if the module is not found.

The icons for the touchpad, starting platform (with relay detection) and up to three backup buttons will be present for each harness if they have been selected in the pool configuration.

6.5 Lane menu

When heat is opened that already has swimmers allocated to lanes, any empty lanes will automatically be flagged as unused (If **auto unused lanes** is checked in timing settings). If there are no swimmers in the heat, the race will open with all lanes flagged as in use.

The Lane menu is accessed by either clicking once on the lane number or, when the race window has focus, the number keys 1 - 9 and 0 on the main keyboard.

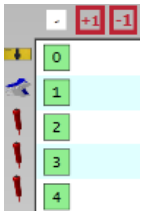
When the menu is visible, the underlined key can be used as the shortcut to the menu item as shown in the image here.

The #0 shown here means you chose lane 0, and your menu choice will be applied to this lane. Pressing 0 will exit the menu.

6.5.1 Adding or removing a lap for one lane

Click on the lane button (eg 1) and select Lap -1 or Lap +1 to add or remove a lap

6.5.2 Adding or removing a lap for all swimmers



Click on the white button upper lanes buttons - +1 -1.

Select +1 or -1 to add or remove a lap to all swimmers.

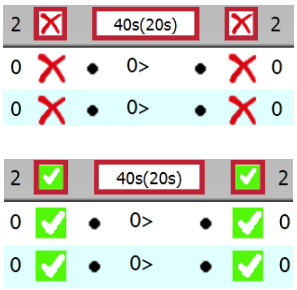
Click on the white button to cancel display of +1 and -1

6.5.3 Arming or disarming a touchpad or all touchpads

The quickest way to arm or disarm a specific lane is by clicking ✗/✓.

To arm or disarm all lanes click ☒/☑.

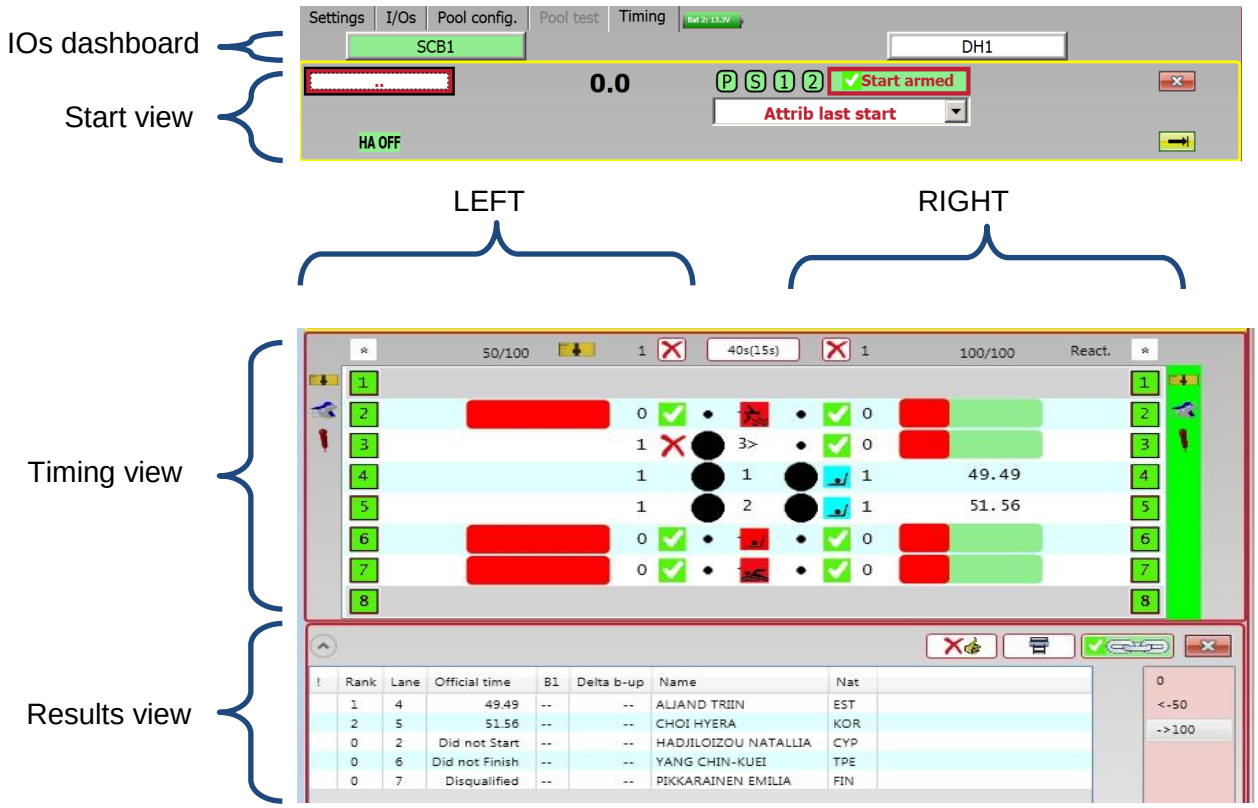
	Meaning	*Function (Click)*
✗	Lane is disarmed	Arm lane
✓	Lane is armed	Disarm lane
☒	All lanes are not armed	Arm all lanes
☑	All lanes are armed	Disarm all lanes



You can also use lane menu clicking on the lane button (eg 1) and select Q: Arm touchpad (or Q on keyboard) or Y: DisArm touchpad (or Y on keyboard) to arm or disarm a lane

6.6 The race view

The race view windows displays current race and is divided like below :



6.6.1 IOs dashboard

The dashboard controls the IOs. You have possibility to send data to the scoreboard or import & export data from data handling software.

On	Enable / refresh scoreboard
Off	Clear scoreboard
Send results	Send results of the race displayed in the results view
Freeze	Freeze last information displayed
Day time	Display day time

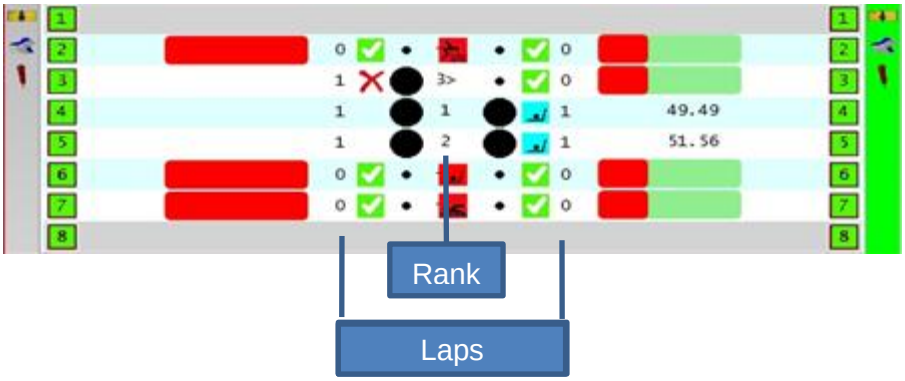
Refresh startList	Import start lists from DH
Export all results	Export results to DH

6.6.2 Start view

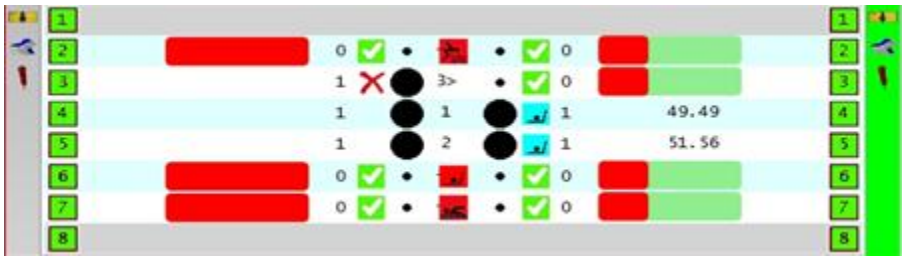
	Meaning	*Function (Click)*
..		Timing window focus button
HA OFF	Harnesses are connected	Disconnect harnesses
HARNESSES DISCONNECTE	Harnesses are disconnected	Connect harnesses
1:04.5	Current race time	
Arm start	Start is disarmed	Arm start
Start armed	Start is armed	Disarm start
P	Primary/Secondary start is armed	
P	Primary/secondary start is disarmed	
Attrib last start		Select another start time (double click = last start time)
17:07:43.5196	Start time of current race	
		Close Race window
		Next heat
NO MORE HEATS AVAILABLE	Last heat of the event	

6.6.3 Timing view

	Meaning	*Function (Click)*
		Open lane menu (Chap. 6.5)
50/100	Distance performed / Distance of current race	
	All lanes are not armed	Arm all lanes
	All lanes are armed	Disarm all lanes
40s(20s)	Arming (and Arming at start) delay	Change arm delay



	Meaning	*Function (Click)*
	Lane is disarmed	Arm lane
	Lane is armed	Disarm lane
	Swimmer finishing the race	
	Swimmer DSQ disqualified	
	Swimmer DNS Did not Start	
	Swimmer DNF Did not Finish	
	Touchpad pulse received	
	Waiting touchpad pulse	
1		Harness is connected
1		No connection with harness
1		Searching harness connection
1	Rank or laps	
> or <	Current direction of swimmer	

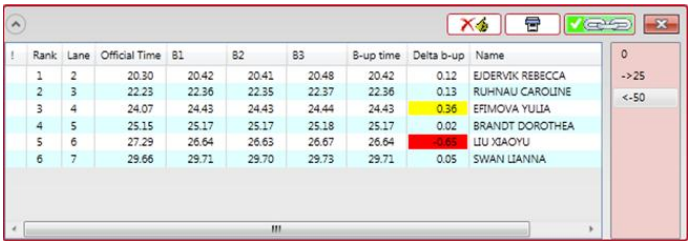


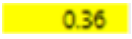
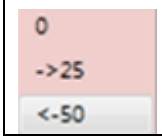
A not so typical 50 metres race showing the various visual icons;

Lane 1	Is not used
Lane 2	Centre icon indicates that the status **DNS** (did not start) has been set on this swimmer.
Lane 3	Has had **1** touch on the left touchpad, the red ✕ shows that the left touchpad is not armed. The **3** in the centre indicates 3rd place at the 50m split and the **>** means that Quantum is now expecting a touch on the right side. The green checkmark shows the right touchpad is armed. The right timing status was fully green showing Quantum is waiting for a touch, but the animated red bar has begun to fill the area because a touch has not been received within an expected time
Lane 4-5	Lane 4 and 5 show swimmers finishing the race with rank in the centre. The blue icon denotes that their race is complete, with **1** touch on the right touchpad and then their finish time.
Lane 6	Centre icon denotes that the status **DNF** (did not finish) has been set on this swimmer.
Lane 7	Centre icon denotes that the status **DSQ** (disqualified) has been set on this swimmer.
Lane 8	Is not used

6.6.4 Result view

	Meaning	*Function (Click)*
		Close result view
		Open result view
	Race is not official	Set race as official
	Race is official	
		Print results
	Timing and results windows are linked	Unlink timing and result windows
	Timing and results windows are unlinked	Link timing and result windows
		Close result window

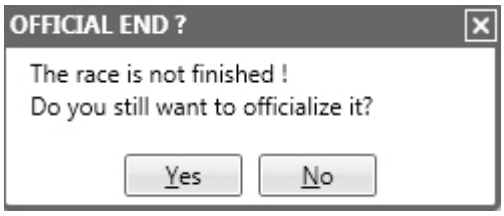


	Meaning	*Function (Click)*
	Race is not official	Set race as official
	Race is official	
	Delta backup time is 200ms higher than time	
	Delta backup time is 200ms lower than time	
	0 : reaction time 25 : metres 50 : 50 metres	Select distance of result view

6.7 Make the result official

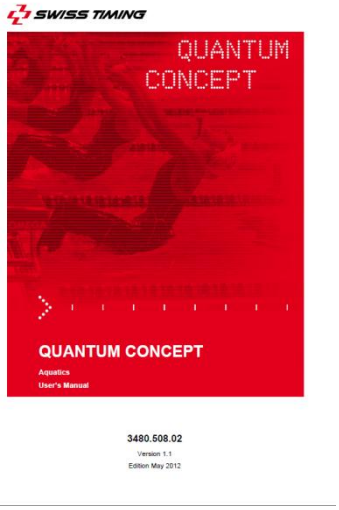
To officialise a race, press . Go to next race pressing or Ctrl-N.

If race is not finished, information message is displayed.



7 INSTALLATION

See document Quantum Concept 3480.508.02



8 MAINTENANCE AND PROTECTION

Refer to each product manual for specific maintenance.

8.1 General maintenance (after/before events)

8.1.1 Quantum

Calibration certificate is delivered for 4 years. After this period, if requested by your Swimming Federation, you need to return Quantum to Swiss Timing for re-calibration.

8.1.2 Deck plates / Harnesses

Deck plate connections / mobile harness modules should be cleaned and sockets re-greased using the supplied Silicon grease on a weekly basis and after every use.

8.1.3 Touchpads

Touchpads should be stored vertically and where available on an approved storage trolley supplied by Swiss Timing. They should be cleaned using fresh water and a cloth, do not use detergents or abrasives. After cleaning allow to dry naturally. Touchpad cables should be laid on top of the touchpad during storage to prevent damage.
Touchpads should be tested and inspected for physical damage prior to each use. Broken slats with sharp edges may be a danger to swimmers.

8.1.4 Starting blocks

They should be cleaned (including RBD) using fresh water and a cloth, do not use detergents or abrasives, on a weekly basis and after every use
OSB Start blocks must be calibrated prior to use, if removed between use they should not be stacked, coil the cable and fasten inside the block to prevent damage. The start blocks may be left in place between use, (though cables should be disconnected from the deckplate), but this may have an effect on the working life of moving parts. There are a number of moving parts inside the start block that should be considered consumables and should be replaced every 2-3 years by a service technician.

8.1.5 Push buttons

OIT push buttons, these should be tested prior to use, clean with a damp cloth and allow to dry naturally. There are no serviceable parts within the OIT3.

8.1.6 Cables

All cables should be tested prior to use, clean with a damp cloth and allow to dry naturally.

8.1.7 Batteries

Battery packs and battery powered equipment, where possible fully discharge and then recharge prior to storage, if stored for long periods recharge at regular intervals and maintain a regular discharge and recharge regime. This will maximise the life of your battery. Batteries may alternatively be stored on a continuous floating charge.

8.1.8 Electronic equipment

Clean with a damp cloth or approved cleaner for lap tops and PCs. Avoid sudden changes in temperature when moving into a humid atmosphere to reduce condensation in the equipment. The equipment should be stored and where possible be operated in a dry, temperature and humidity controlled environment. Swiss Timing will not be responsible for any software faults arising from the customer installing additional software or equipment on to their IT equipment, this equipment should only be considered as an element of the timing system and no more.

8.1.9 Serial printer

Clean with a damp cloth and allow to dry naturally. Fully charge the battery prior to storage and remove the battery when stored for more than one month. Paper rolls should be stored away from heat sources to prevent damage.

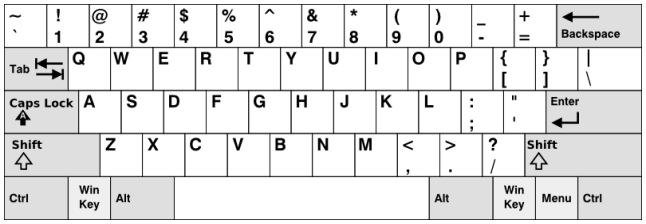
9 APPENDIX

9.1 Heat status

Status	
F	Finished but not official
I	Idle
O	Official
S	Started
U	Unfinished race
W	Waiting for start

9.2 Short keys (US keyboard)

If you want to create your own shortcut, you can use QuantumShortCutEditor software.
(…\SwissTiming\DRCApp\Quantum\Swimming)
Do not use this software without practice.
Backup the existing file first, so you can go back.


~ ` ! 1 @ 2 # 3 $ 4 % 5 ^ 6 & 7 * 8 (9) 0 _ - + = Backspace
Tab Q W E R T Y U I O P { [}] |
Caps Lock A S D F G H J K L : ; " ' Enter
Shift Z X C V B N M < , > . ? / Shift
Ctrl Win Key Alt Alt Win Key Menu Ctrl

Timing View (…\SwissTiming\DRCApp\Quantum\Swimming\Keyb)	
Space	Toggle active side
0 1 2 3 4 5 6 7 8 9 10 11 12	Open lane menu ← Lane number
Lap -1 Lap +1 Q: Arm touchpad Y: DisArm touchpad Edit Finish Time DSQ DNS DNF Take Backup time Used / Unused	**-** Lap -1
	+ Lap +1
	Q Arm touchpad
	Y Disarm touchpad
	F Edit finish time
	D Disqualified (DSQ)
	S Did not start (DNS)
	B Take backup time
	U Used / unused
Ctrl-N	Next heat
Ctrl-Q	Arm all lanes
Ctrl-Z	Disarm all lanes
Ctrl-Shift-S	Manual start command
Alt-S	Arm start
F5	Timing view focus
F6	Event window focus
F7	Toggle result view
F8	Timing window focus
F11	Set a race as official
Ctrl-Insert	Scoreboard ON
Ctrl-Home	Scoreboard OFF
Ctrl-Page Up	Send results to scoreboard
CTRL-Shift-	Manual touchpad command

9.3 Version history

Version	Date	Modifications since last version
0.0	01.05.2012	Initial version
1.0	01.02.2014	First version

NOTES

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